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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/678,088	10/06/2003	Masayuki Nakayasu	0425-1082P	4496
2292	7590	08/17/2006	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			GOODEN JR, BARRY J	
			ART UNIT	PAPER NUMBER
			3616	

DATE MAILED: 08/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/678,088	<b>Applicant(s)</b> NAKAYASU ET AL.	
	<b>Examiner</b> Barry J. Gooden Jr.	<b>Art Unit</b> 3616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 9-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16-19 is/are allowed.
- 6) ☒ Claim(s) 1-6 and 9-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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### DETAILED ACTION

1. This office action is in response to the amendment filed June 9, 2006. Currently, claims 1-6 and 9-19 are pending. Claims 1-6, 10, 12, 14, and 16 are currently amended, claims 7 and 8 are canceled, claims 9, 11, 13, 15, 17, and 18 are as previously presented and claim 19 is currently added.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-6, 9, 11/1, and 14/1 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In regards to claims 1 and 5, at line 6, "a gas discharge passage extending" is unclear. Examiner suggests replacing with -- a gas discharge passage, the gas discharge passage extending --.

In regards to claim 1, at line 8, "a diffuser" is unclear. Examiner suggests replacing with -- the diffuser portion --.

In regards to claim 5, lines 10-12, "and an igniting portion of the igniter being located outside of the rupturing plate in a radial direction of the rupturing plate" is unclear. Examiner suggests removing the unclear terminology.

In regards to claim 6, [[wherein the guiding passage is defined by a cap ...and a hole which is provided at a position, on a side face of the cap, which exactly opposed the rupturable plate]] is unclear. If claim 5, lines 10-12, as best understood, suggest the igniting portion is unopposed to the plate, "located outside of the rupturing plate in a radial direction" thus not directly opposed to the plate, then the axial direction of the igniter would inherently directly oppose a surface of the rupturable plate.

Examiner suggests removing the terminology.

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In regards to claim 6, the specification does not show support for applicant's embodiment 1 having a guiding passage. Examiner suggests all references to embodiment 1 be removed from any claims depending from claim 5.

***Claim Rejections - 35 USC § 102***

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 5 and 6 are rejected under 35 U.S.C. 102(e) as being anticipated by Nanbu et al., US Patent 6,676,157 B2.

In regards to claims 5 and 6, Nanbu et al. shows an inflator comprising:

a cylindrical inflator housing (10) which is closed at one end (right side of Figure 4) thereof and opened at the other end (14), and in which a pressurized gas is charged; and,

a diffuser portion (40) connected to an opening (14) of the inflator housing (10), and having a gas discharge port (Reference is made to Figure 4) therein;

a rupturable plate that closes at least one portion of a gas discharge passage, the gas discharge passage extending from the inflator housing to the gas discharge port of the diffuser portion;

an igniter (300), provided spaced apart from the rupturable plate (16) prior to an activation of the igniter (300) for rupturing the rupturable plate (16) disposed in the diffuser portion (40) such that an axial direction of the inflator housing (10) is orthogonal to an axial direction of the igniter (300); and,

means (passage) for directing a rupturing energy generated by activation of the igniter (300), in a direction that exactly opposes the rupturable plate (16) to rupture the rupturable plate (16);

wherein said means is a guiding passage, disposed inside the diffuser portion, for guiding the rupturing energy discharged from the igniter (300) to the rupturable plate (16) formed in the diffuser portion (40), and the rupturing energy is guided to a central portion of the rupturable plate (16) or a portion thereof in the vicinity of the central portion by action of the guiding passage (Reference is made to Figure 4);

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wherein the guiding passage is defined by a cap, which surrounds at least the igniting portion of the igniter (300) and is disposed in a direction orthogonal to the axial direction of the inflator housing (10), and a hole which is provided at a position, on a side face of the cap, which exactly opposes the rupturable plate (16);

wherein the pressurized gas is charged in a single space (12) defined by the cylindrical inflator housing (10) and the diffuser portion (40);

further comprising: a filter (42) which catches fragments of the rupturable plate (16) being disposed in the gas discharge passage extending from the rupturable plate (16) to the gas discharge port (See Figure 4).

6. Claims 10-13 and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Horton et al., US Patent 6,629,703 B2.

In regards to claims 10-13 and 15, Horton et al. show all of the claimed elements including an inflator comprising:

a cylindrical inflator housing (10) which is closed at one end (12) thereof and opened at the other end (18) and in which (11) a pressurized gas is charged;

a diffuser portion (30,31) which is connected to an opening portion (19) of the inflator housing (10) and having a gas discharge port;

a gas discharge passage extending from the inflator housing (10) to the gas discharge port of the diffuser portion (30,31), at least one portion of the gas discharge passage being closed by a rupturable plate (17);

an igniter (3), for rupturing the rupturable plate (17), disposed in the diffuser portion (30,31), such that the axial direction (A) of the inflator housing (10) and the axial direction (C) of the inflator (3) obliquely cross with each other, the igniter (3) generating a rupturing energy acting in a direction oblique to the rupturable plate (17) to rupture the rupturable plate (17);

further comprising: a diffuser tube (32), having a second gas discharge port, connected to the gas discharge port of the diffuser portion (30,31);

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wherein the diffuser tube (32) is arranged such that the diffuser tube (32) is coaxial to the inflator housing (10) or the central axis of the inflator housing (10) and the central axis of the diffuser tube (32) are parallel to each other (Reference is made to Figures 3 and 4); and,

wherein the diffuser tube (32) has a plurality of second gas discharge ports in a peripheral face thereof and the plurality of second gas discharge ports are provided circumferentially at equal intervals (Reference is made to Figure 4).

***Claim Rejections - 35 USC § 103***

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claim 14/10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Horton et al., in view of Nanbu.

In regards to claim 14/10, Horton et al. show all of the claimed elements except for a filter being disposed in a diffuser tube.

Nanbu teaches a filter (42) which catches fragments of the rupturable plate (16) being disposed in a gas discharge passage.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the inflator of Horton et al. in view of the teachings of Nanbu to include a filter so as to

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provide a secure guard against pieces of the rupturable plate entering the airbag cushion or the air which an occupant may breathe.

In addition, it would have been obvious to one having ordinary skill in the art at the time the invention was made to locate the filter within the diffuser tube of Horton et al. so as to catch fragments of the rupturable plate (20b), since it has been held that rearranging parts of an invention involves only routine skill in the art.

#### ***Allowable Subject Matter***

10. Claims 16-19 are allowed.

11. Claim 1 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

12. Claims 2-4, 9, and 11/1-15/1 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

#### ***Response to Arguments***

13. Applicant's arguments filed June 9, 2006 have been fully considered but they are not persuasive.

With respect to the applicant's assertion that the guiding passage of Nanbu is not disposed within the diffuser portion, examiner maintains the guiding passage of Nanbu is shown within the diffuser portion (Reference is made to Figure 4).

#### ***Conclusion***

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barry J. Gooden Jr. whose telephone number is (571) 272-5135. The examiner can normally be reached on Monday-Friday 8:00am-4:30pm.


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul N. Dickson can be reached on (571) 272-6669. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Barry J Gooden Jr.  
Examiner  
Art Unit 3616

BJG

  
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